Article title: Pragmatic study of a thromboprophylaxis algorithm in critically ill patients with sars-cov-2 infection

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Detailed information about the practical use of the tailored thromboprophylaxis algorithm

The initial step in our algorithm was to calculate the thrombotic risk score. We proposed to monitor hemostasis by monitoring the following hemostasis indicators: D-Dimers (every 48 hours), fibrinogen (every 24 hours), and ATIII levels. The ATIII analysis was only requested in the presence of one of the two prothrombotic factors mentioned above. Thus, in the presence of at least 2 pathological biomarkers (thrombotic risk score ≥ 2) and in the absence of hemorrhagic risk factors (modified IMPROVE bleeding risk score), therapeutic anticoagulation by the i.v. UFH "moderate regimen" was recommended with an APTT target of between 35-50 s (i.e. 1.5 times the initial APTT value). We also recommended screening patients at risk of bleeding by adapting (consensus of the entire team) the IMPROVE bleeding risk score by selecting the factors that appeared to us to be the most associated with bleeding in the context of COVID-19 in the ICU. Any underlying conditions, such as renal failure (GFR < 30 mL/min), impaired hemostasis (INR > 1.5 or thrombocytopenia < 50,000 x 10^9/L), active gastroduodenal ulcer, or advanced age, could put the patient at a high risk of bleeding and was included in our anti-coagulation regimen. If the patient had a risk factor identified by the modified IMPROVE bleeding risk score, LMWH was recommended. Our protocol used enoxaparin 4000 IU/daily s.c., reinforced, if necessary, according to two criteria: a) the patient's body weight and b) the presence of invasive mechanical ventilation or high flow nasal oxygen therapy. In the absence of pathological biomarker (thrombotic risk score = 0), our protocol recommended LMWH s.c. with its intensity modulated according to the two above-mentioned criteria. Finally, in the presence of a single pathological biomarker (thrombotic risk score = 1), performing a viscoelastic test allowed the physician to establish a hypercoagulability profile (ROTEM-EXTEM™ Maximum Clot Firmness > 72 mm), and, depending on the risk factors identified by the modified IMPROVE bleeding risk score, anticoagulation by intravenous UFH or LMWH s.c. was recommended. On the other hand, the absence of hypercoagulability (ROTEM-EXTEM™ MCF $\leq$ 72 mm) indicated anti-coagulation by LMWH s.c. with an intensity that was modulated according to the two above-mentioned criteria. All patients were eligible to receive continuous i.v. UFH except when they met one of the hemorrhagic risk factors described in the algorithm (Fig. 1).